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U. S. DEPARTMENT OF AGRICULTURE.

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REPORT

OF

THE BOTANIST

FOR

1899.

BY

FREDERICK V. COVILLE.

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[FROM THE REPORT OF THE SECRETARY OF AGRICULTURE.]



WASHINGTON:

GOVERNMENT PRINTING OFFICE.

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## CONTENTS.

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	Page.
Work of the year.....	53
Poisonous plants .....	53
Seed-test law .....	53
Trial grounds at Kensington, Md .....	54
Plant house .....	54
Seed and plant introduction .....	54
Inventories of seeds and plants.....	55
Testing garden on the Potomac flats .....	55
Economic plants of the Tropics.....	56
Publications .....	56
Correspondence .....	57



## REPORT OF THE BOTANIST.

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U. S. DEPARTMENT OF AGRICULTURE,  
DIVISION OF BOTANY,  
*Washington, D. C., August 31, 1899.*

SIR: I have the honor to submit herewith my seventh annual report as Botanist of the Department of Agriculture, covering the year ending June 30, 1899.

Respectfully,

FREDERICK V. COVILLE,  
*Botanist.*

Hon. JAMES WILSON, *Secretary.*

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### WORK OF THE YEAR.

#### POISONOUS PLANTS.

The work on poisonous plants continues to be one of the most popular lines of investigation thus far undertaken by the Division of Botany. The plan of systematically investigating actual cases of poisoning, begun in 1896, has been continued. In the fiscal year 1897 thirty-four cases were investigated; in 1898, forty-one cases, and during the past year, sixty-seven cases. Of these sixty-seven cases, twenty-six pertained to farm stock and forty-one to man. The fatalities included over 4,000 head of farm animals, and at least 21 persons. Less than 20 per cent of these cases were reported by the newspaper-clipping bureaus, to which we subscribe, the rest having been brought to our attention by correspondents. The whole number of fatalities due to poisonous plants is without doubt considerably greater than is shown by our figures. Even these, however, compared with the statistics in Blyth's Text Book on Poisons, show that during the past year the death rate of human beings in the United States from poisonous plants is twice as great as the average death rate in England from the same cause. This is unquestionably due to a lack of popular knowledge about poisonous plants. Bulletin No. 20, entitled "Principal poisonous plants of the United States," issued early in the fiscal year, has done much to supply this lack. The Illinois State Board of Health republished this report in bulletin form for free distribution to the physicians of that State. In addition to the divisional bulletin, a Farmers' Bulletin, No. 86, based on the earlier publication, has been prepared, and 50,000 copies of it printed. This was republished in serial form in Merck's Market Report, and a German translation in Der Hausdokter and the Apotheker-Zeitung.

#### SEED-TEST LAW.

Under the authority of the law authorizing the Secretary of Agriculture to purchase seeds in the open market, test them, and in his

discretion to publish the results of the tests, including the names of the dealers, in case the seeds were below grade, several hundred tests have been made. From these it is clear that grass seed, particularly imported grass seed, requires more attention from the Department, on account of its impurities, than any other class of seeds. Up to the present time it has not seemed advisable to publish the names of any of the dealers who have been selling inferior grass seed, but warning letters have been sent them, and further tests during the coming year will show whether this method of procedure accomplishes the object for which the law was made.

#### TRIAL GROUNDS AT KENSINGTON, MD.

The trial grounds at Kensington, Md., have been increased in size during the past year, and now occupy 4 acres. They were used this year chiefly for variety tests of the seeds sent out last spring in the Congressional seed distribution, and for a variety test of the lettuces offered by American seedsmen. The location of these grounds at a distance of 11 miles from Washington is an inconvenience, and as soon as the area on the Potomac flats, now under the control of the Department, is brought into proper condition, the trials at present carried on at Kensington should be moved to Washington.

#### PLANT HOUSE.

The authority of Congress having been secured for the erection of a plant house for use in botanical investigations, plans have been prepared and a contract for the erection of the house has been made. When completed, this house will furnish ample accommodations for our germination tests of seeds, and will also serve as a packing and temporary storage place for the living plants and nursery stock imported from foreign countries.

#### SEED AND PLANT INTRODUCTION.

In the first year of his administration the present Secretary of Agriculture made a new departure in the Department's seed distribution by devoting a portion of the seed distribution fund to securing from northern Europe and Asia, through an agent sent abroad for that purpose, a number of drought-resistant and otherwise new or valuable agricultural plants. Later in the same year he appointed another special agent at Washington to devise a systematic scheme of seed and plant introduction. As the Division of Forestry was at that time preparing to conduct a special inquiry on the subject of trees suitable for introduction into our arid region, and had money available for the purpose, the work of this special agent was initiated in that Division. By special request of the Secretary of Agriculture the following proviso was inserted in the agricultural appropriation act taking effect July 1, 1898:

That twenty thousand dollars of the sum thus appropriated, or so much thereof as the Secretary of Agriculture shall direct, may be used to collect, purchase, test, propagate, and distribute rare and valuable seeds, bulbs, trees, shrubs, vines, cuttings, and plants from foreign countries for experiments with reference to their introduction into this country; and the seeds, bulbs, trees, shrubs, vines, cuttings, and plants thus collected, purchased, tested, and propagated, shall not be included in general distribution, but shall be used for experimental tests, to be carried on with the cooperation of the agricultural experiment stations.

The work thus specifically authorized was organized as a section of the Seed Division, with the designation, Section of Seed and Plant Introduction. At first the special agent in charge of the section was responsible directly to the Secretary of Agriculture, but to simplify administration the section afterwards, by an order of the Secretary dated October 28, 1898, was placed under the direction of the Botanist of the Department. The section as now organized consists of a corps of agricultural explorers working in foreign countries, and an office corps at Washington who receive and distribute the seed and plant importations.

During the past year four agricultural explorers have been in the field: Mr. M. A. Carleton, who visited Russia to secure superior varieties of cereals resistant to cold, drought, and fungous diseases; Dr. S. A. Knapp, who went to Japan to procure a variety of rice suitable for cultivation under the new system developed in southwestern Louisiana, and possessing in particular a high milling quality; Mr. W. T. Swingle, who investigated the agriculture of the Mediterranean region, and secured a stock of fig-fertilizing insects for the Division of Entomology, the Deglet Noor and other superior varieties of dates, and European grapes grafted on selected disease-resistant stocks, besides other important agricultural plants; and Mr. D. G. Fairchild, formerly in charge of the Washington office of the section, who in company with Hon. Barbour Lathrop, visited South America in the latter part of the year to make a preliminary survey as the basis of future agricultural exploration. Mr. Carleton, Dr. Knapp, and Mr. Swingle have returned, having successfully carried out the objects of their investigations.

#### INVENTORIES OF SEEDS AND PLANTS.

As the number of seeds and plants imported from foreign countries increased it became necessary, both for use in the office, and especially for the convenience of those desiring to secure seeds for experimental purposes, to have a printed catalogue or inventory of the importations. Four of these inventories, covering 2,019 numbers, have already been issued, and further inventories are in preparation. It is proposed to issue, from year to year, new inventories of the stock on hand, in which shall be incorporated, in addition to the customary data, such information as shows the success of these introductions. In this way, and by the gradual dropping out of those seeds found to be unsuccessful, the inventories will grow successively more valuable from year to year.

#### TESTING GARDEN ON THE POTOMAC FLATS.

The Division of Botany has long needed an area conveniently near the Department which could be used as a testing ground, and the handling of the seeds and plants introduced from foreign countries emphasized this need. In many cases the stock of seed or the number of cuttings was so small that unless the experimenter who received them was successful the original shipment might be entirely lost and the importation prove a failure. It was felt, also, that the possibility of introducing new plant diseases with the importations necessitated a quarantine station. Correspondence was therefore begun with the War Department regarding the use of a portion of the Potomac Flats, and this resulted in the enactment of the following clause in "An act

relative to the control of wharf property and certain public spaces in the District of Columbia," approved March 3, 1899:

That the Secretary of War is authorized to grant permission to the Department of Agriculture for the temporary occupation of such area or areas of Potomac Park, not exceeding a total of seventy-five acres in extent, as may not be needed in any one season for the reclamation or park improvement, the said areas to be used by the Department of Agriculture as testing grounds: *Provided*, That nothing herein contained shall be construed to change the essential character of the lands so used, which lands shall continue to be a public park, as provided in the act of Congress approved March third, eighteen hundred and ninety-seven: *And provided further*, That said area or areas shall be vacated by the Department of Agriculture at the close of any season upon the request of the Secretary of War: *And provided further*, That the entire park shall remain under the charge of the Secretary of War.

On April 8 the Acting Secretary of War issued the desired permit. The area thus occupied by the Department of Agriculture contains about 25.6 acres, and is located below the Long Bridge and along the southwest side of the Washington Channel of the Potomac. It was at once plowed and harrowed preparatory to summer fallowing.

#### ECONOMIC PLANTS OF THE TROPICS.

During the past year we have received a large number of inquiries about the cultivated plants of the Tropics, and these inquiries were answered by the one member of our force who is familiar with tropical agriculture. Our experience with this correspondence shows that there is a widespread interest in the United States in the subject, and a demand for correct information which is not satisfied by published works; that there is great opportunity for the application of American agricultural methods and devices in the Tropics, and that fully illustrated reports on the status of the important tropical plant products, based on the work of our own agents, is greatly needed. In the absence of means for carrying on such work in the Tropics through the members of our botanical corps, we have received and published two reports kindly placed at our disposal by others. These are Bulletin 21, "Vanilla culture as practiced in the Seychelles Islands," by S. J. Galbraith, a Scotch planter of those islands, and Circular 17, "Notes on the plant products of the Philippine Islands," by Frank H. Hitchcock, chief of the Section of Foreign Markets. I urge the securing of an appropriation for the systematic prosecution of work in this line.

#### PUBLICATIONS.

The publications issued during the year, in addition to reprints of earlier reports, are as follows:

*Bulletins*.—No. 20, Principal Poisonous Plants of the United States, by V. K. Chesnut, issued July 7, 1898; No. 21, Vanilla Culture as Practiced in the Seychelles Islands, by S. J. Galbraith, issued January 7, 1899; No. 86 (Farmers' Bulletin), Thirty Poisonous Plants of the United States, by V. K. Chesnut, issued January 14, 1899.

*Circulars*.—No 16, The Section of Seed and Plant Introduction, by O. F. Cook, issued February 10, 1899; No. 17, Notes on the Plant Products of the Philippine Islands, by Frank H. Hitchcock, issued June 5, 1899; No. 13 (third edition), Observations on Cases of Mushroom Poisoning in the District of Columbia, by Frederick V. Coville, issued June 10, 1899.

*Report.*—Report of the Botanist for 1898, by Frederick V. Coville, issued December 1, 1898.

*Inventories of seeds and plants.*—No. 1, Foreign Seeds and Plants imported by the Section of Seed and Plant Introduction, 1–1,000, issued April 10, 1899; No. 3, Seeds of Saccharine Sorghums distributed by the Section of Seed and Plant Introduction, issued April 21, 1899; No. 4, Cereals and Forage Plants Collected in Russia by M. A. Carleton for the Section of Seed and Plant Introduction, issued April 24, 1899.

*Papers prepared for the Department Yearbook for 1898.*—Weeds in Cities and Towns, by Lyster H. Dewey; Can Perfumery Farming Succeed in the United States? by Edward S. Steele; Grass Seed and its Impurities, by Gilbert H. Hicks (issued May 9, 1899, in the Yearbook, and later in the same month as separates).

#### CORRESPONDENCE.

It is the policy of the Division of Botany to write as few letters as possible consistently with the necessities of the work. Many inquiries are answered by marked copies of circulars or other publications of the Division. In spite of this the correspondence continues to increase as the work of the Department becomes better known throughout the country. About 6,500 letters have been written during the year. A small proportion of these were requests for information sent out by investigators in the Division, but the great majority of them were replies to questions covering a wide range of topics pertaining to plants and plant literature. There has been an increased demand for information about the cultivation of plants yielding fibers, medicines, essential oils, and rubber. The acquisition of Hawaii and Porto Rico has brought numerous requests for information about plants that may be cultivated in those islands.

